GymRats – Gym Management System

1. Project Overview

GymRats is a complete digital solution designed to manage gym operations efficiently. It helps in handling member records, membership packages, billing and payment tracking, and communication between gym administrators and members through notifications. The system reduces manual paperwork and provides real-time updates using cloud technologies.

2. Technologies Used

2.1 Frontend Technologies

- **HTML5** – Used for structuring the web pages.
- **CSS3** – Used for designing a modern and responsive interface with:
    - CSS Variables (for theming)
    - Flexbox and Grid layouts
    - Glassmorphic design using backdrop filters
    - Smooth animations and transitions
    - Media queries for responsive design
- **Vanilla JavaScript** – Used for client-side interactivity and dynamic updates.

2.2 Backend & Database

- **Firebase Authentication** – Secure login system using Email/Password.
- **Firebase Firestore** – NoSQL cloud database for storing and syncing data in real time.

2.3 Design Framework / UI Tools

- **Google Fonts (Inter)** – Clean and modern typography.
- **Glassmorphic UI Design** – Premium design with blur and transparency effects.
- **Luxury Black & Gold Theme** – Professional look for gym management.

3. Key Features

3.1 Admin Dashboard Features

3.1.1 Member Management

- Add new members with complete details
- View all members in a searchable table
- Delete members
- Track member status and joining date
- Supports multiple membership packages:
    - Monthly

o Quarterly
o Yearly

3.1.2 Billing System

- Generate bills for specific members
- Add custom bill amounts and descriptions
- Track bill payment status (Paid / Unpaid)
- Mark bills as paid
- View all bills along with member information

3.1.3 Notification System

- Send broadcast notifications to all members
- Custom notification title and message support
- Timestamp tracking for every notification

3.1.4 Reports & Analytics

- Total members count
- Total revenue calculation in INR (₹)
- Pending bills tracking
- Real-time updates from Firestore

3.2 Member Dashboard Features

3.2.1 Overview Section

- Personalized welcome message
- Active days counter (calculated since joining date)
- Total amount paid tracker
- Member since date display
- Membership details card including:
  o Email
  o Phone
  o Package
  o Status

3.2.2 Bills & Payments

- View complete payment history
- Bill status indicators (Paid / Unpaid)
- Detailed bill information:
  o Amount
  o Date
  o Package
- Download receipt feature for paid bills
- Real-time bill updates

3.2.3 Notifications

- View broadcast notifications from admin
- Notification cards with title, message, and date
- Real-time updates

3.2.4 User Experience Enhancements

- Sidebar navigation with icons
- Smooth section transitions
- Glassmorphic card layouts
- Fully responsive design for all devices

4. Project Structure

```
Gym Management System/
├── index.html                # Login page
├── style.css                 # Global styles & theme
├── admin/
│   └── dashboard.html        # Admin dashboard
├── member/
│   └── dashboard.html        # Member dashboard
└── js/
    ├── firebase-config.js    # Firebase configuration
    ├── auth.js               # Authentication logic
    ├── admin.js              # Admin functionality
    ├── member.js             # Member functionality
    └── utils.js              # Helper functions & logging
```

5. Functional Workflows

5.1 Admin Workflow

1. Admin logs in using credentials
2. Admin navigates through sidebar modules:
   - Members
   - Bills
   - Notifications
   - Reports
3. Admin adds new members with complete details
4. Admin generates bills for members
5. Admin marks bills as paid after payment confirmation
6. Admin sends broadcast notifications
7. Admin views analytics such as revenue and pending bills

5.2 Member Workflow

1. Member logs in using email/password
2. Member views dashboard overview and membership details
3. Member checks payment history and bill status
4. Member downloads receipts for paid bills
5. Member reads notifications sent by admin
6. Member tracks active days and total paid amount

6. Security Features

- Secure login using Firebase Authentication
- Email/Password authentication method
- Role-based access control (Admin vs Member)
- Firestore secure data storage
- Client-side validation
- Protected pages (redirect if not authenticated)

7. Responsive Design

7.1 Breakpoints

- **Desktop:** Full sidebar (280px) + main content
- **Tablet (≤968px):** Reduced sidebar (240px)
- **Mobile (≤768px):** Sidebar hidden, full-width content

7.2 Adaptive Features

- Flexible grid layouts
- Responsive typography
- Touch-friendly buttons
- Optimized card designs for small screens

8. Unique Features

- Glassmorphic premium UI design
- Real-time data sync using Firestore
- Receipt download option for paid bills
- Dynamic stats (active days, total paid amount)
- Broadcast notifications from admin
- Indian Rupee currency formatting (₹)
- Payment status tracking with visual indicators
- Member search functionality
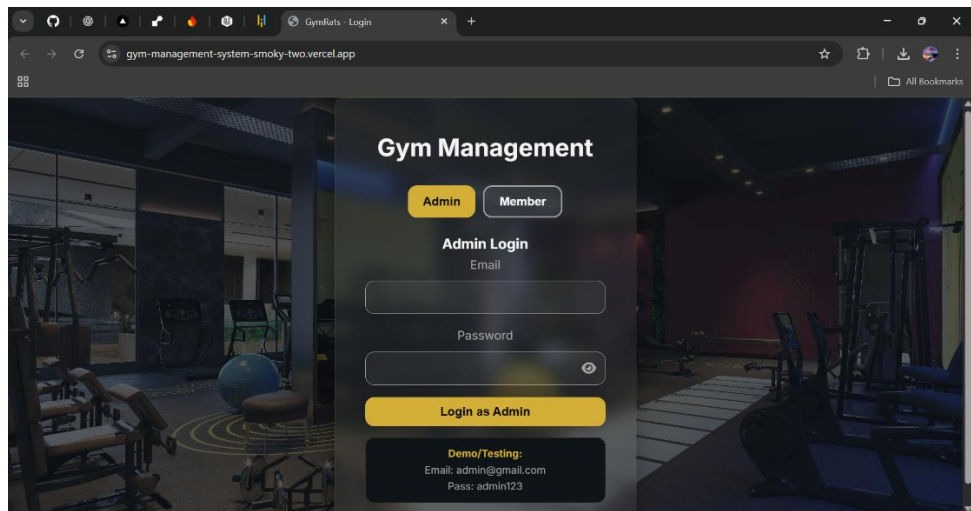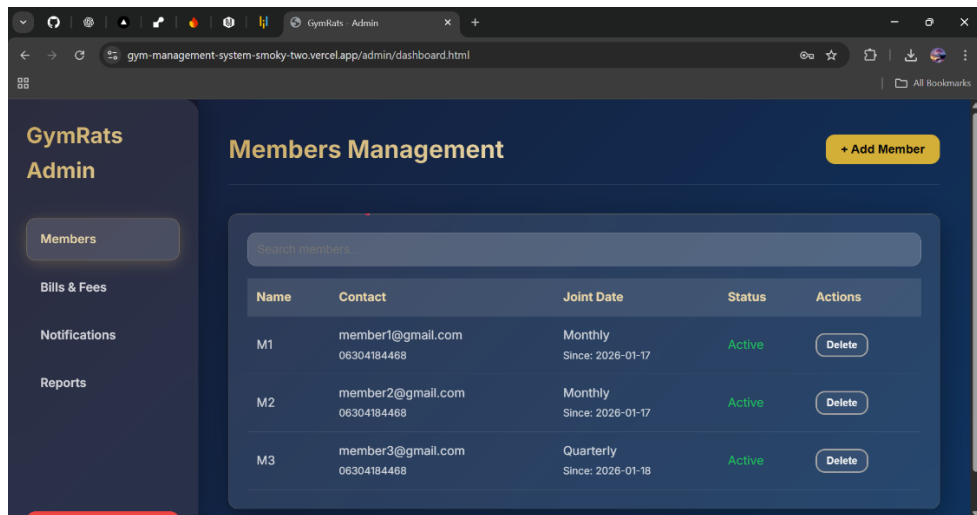
9. Project Visuals

Figure 1: Main Login Page
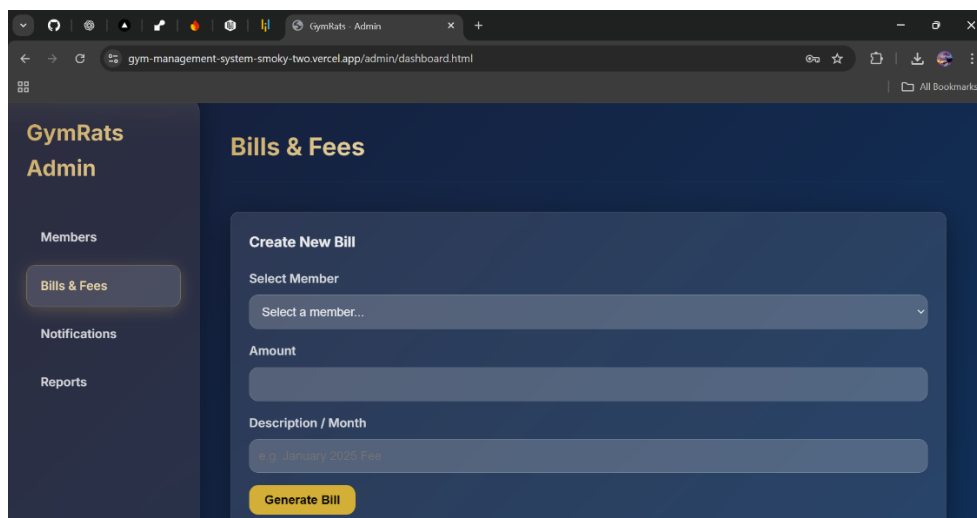

Figure 2: Admin Dashboard - Members

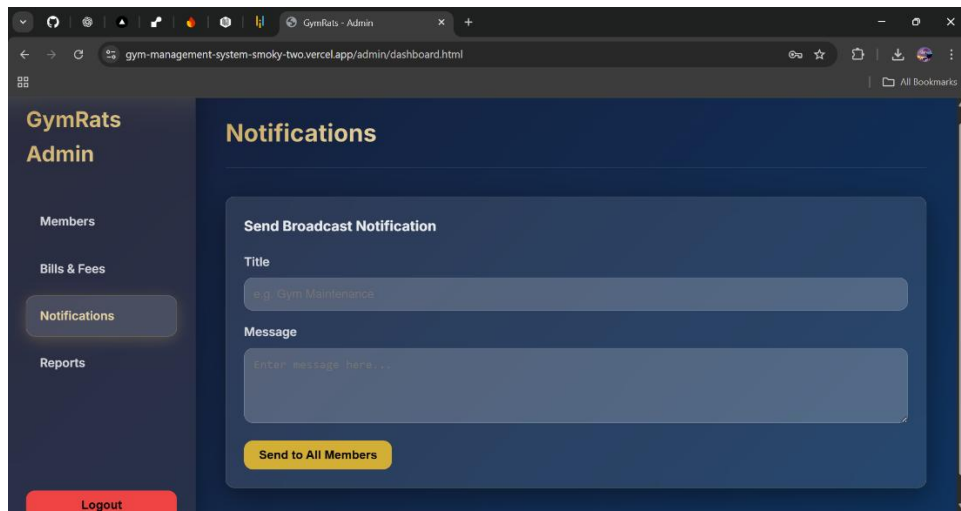*Figure 3: Admin Dashboard - Bills & Payments*
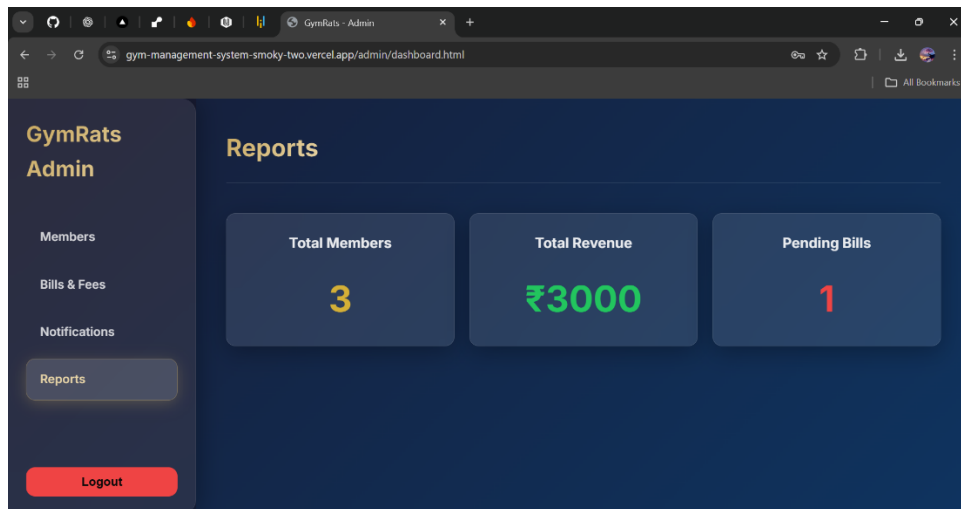
Figure 4: Admin Dashboard - Notifications
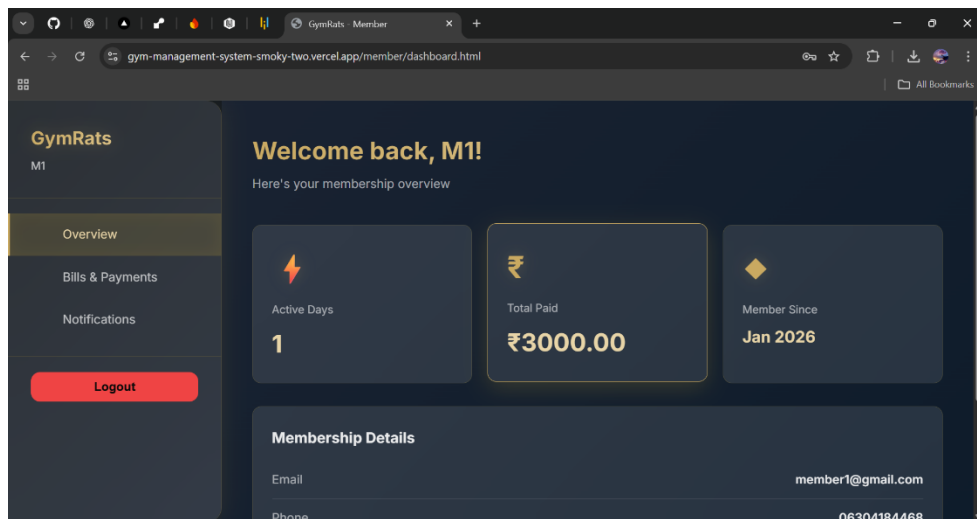

Figure 5: Admin Dashboard – Reports

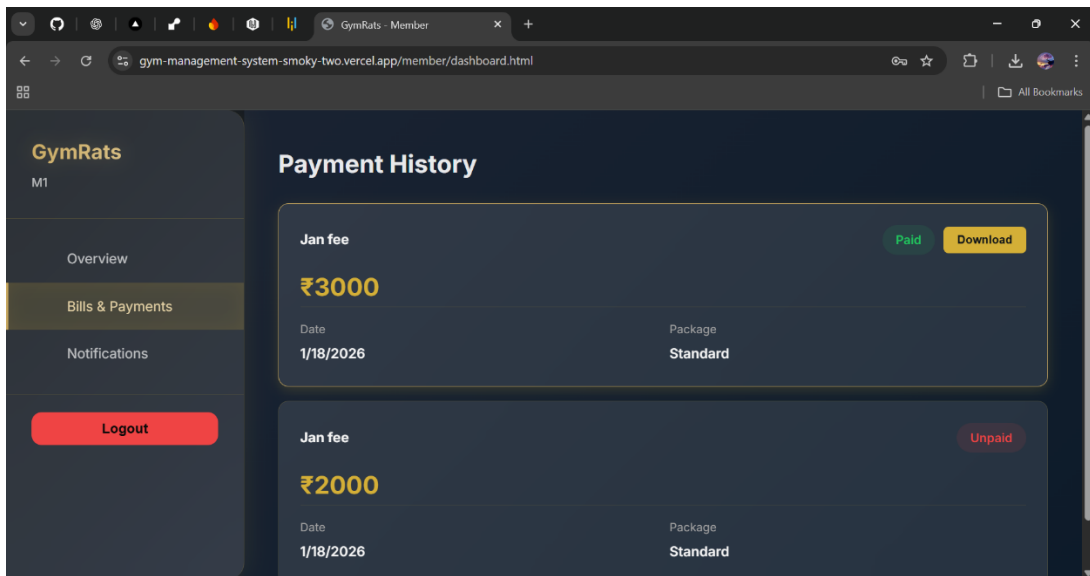Figure 6: Member Dashboard - Overview
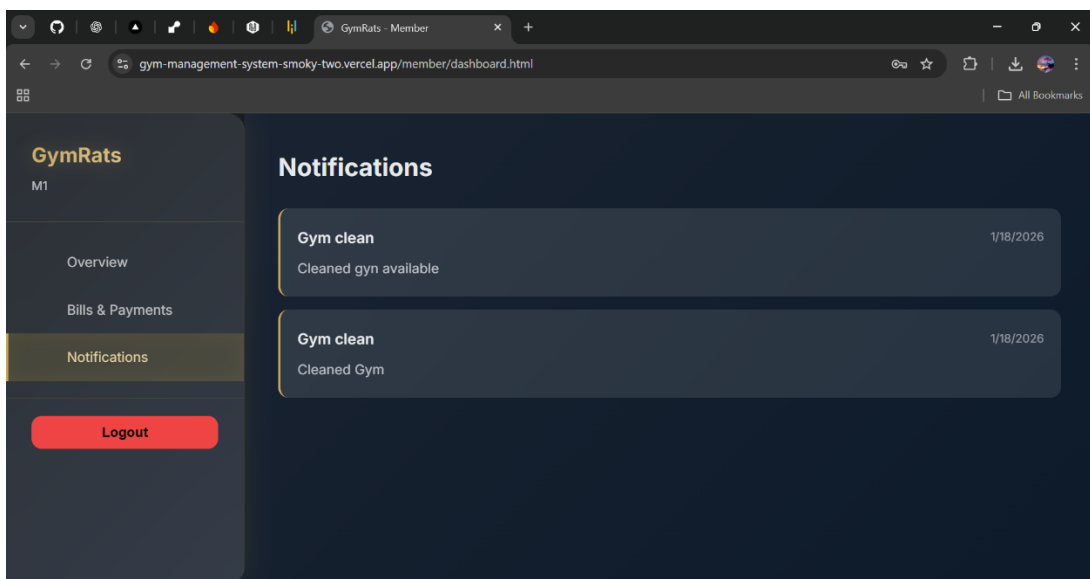
Figure 7: Member Dashboard - Bills & Payments

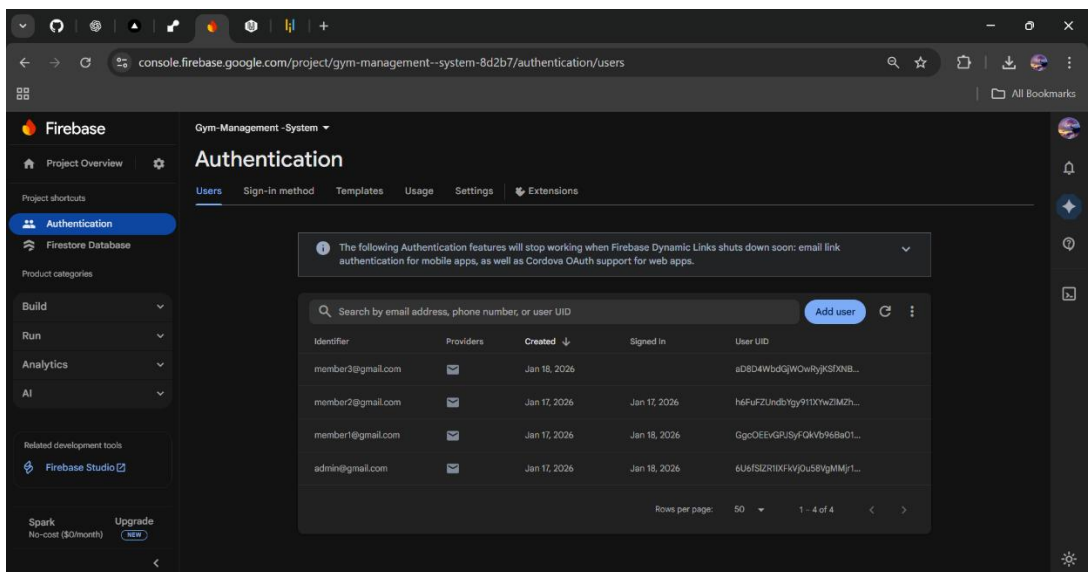Figure 8: Members Dashboard – Notifications
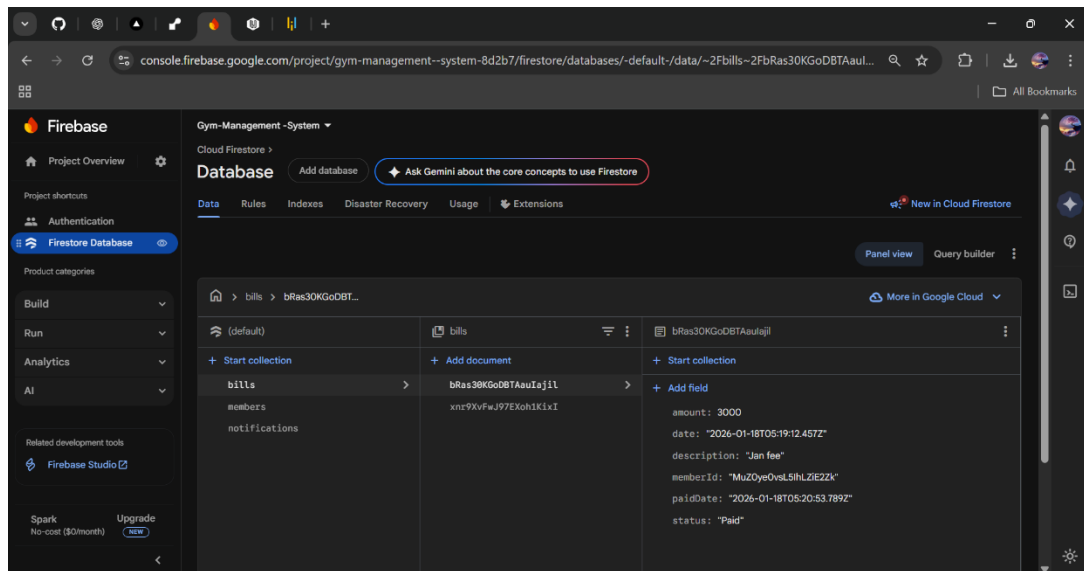

Figure 9: Firebase Authentication

Figure 10: Firebase - Firestore

10. Conclusion

GymRats is a modern and feature-rich Gym Management System designed to simplify gym operations with a premium and professional user experience. It provides secure authentication, real-time data updates, billing automation, and smooth communication between admin and members. With its glassmorphic design and scalable Firebase backend, GymRats is a reliable and efficient solution suitable for gyms of any size.